

THE ZIMBABWE JOURNAL OF ECONOMICS

(Formerly The Rhodesian Journal of Economics)

Editors: A.M. Hawkins, J.A.C. Girdlestone and J.M. Robertson

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THE LAND QUESTION IN ZIMBABWE

J. D. Jordan*

The question of the redistribution of land in Zimbabwe has been receiving increasing attention during the last few years, but many of the suggestions made in this connection do not provide a satisfactory solution to a state of affairs which all but a few agree exists - namely, that the tribal area is overpopulated. The reason is that the problem is defined and referred to as a land-use or land distribution problem, and that discussion of the relative merits of rural development models is obscuring the fundamental issue. In reality the question is a population distribution problem.

Concern regarding the overpopulation of the tribal area was first expressed by Jennings⁽¹⁾ in 1935. By 1962 the position was regarded as serious (see for example the annual report of the Secretary for Internal Affairs, 1962). During the period 1962-1977 employment opportunities in the industrial sector rose only by the equivalent of 2,2% per annum compared with a natural rate of population increase of 3,5% per annum. During this period, the industrial sector did not absorb its own population increase let alone contribute to a lessening of population in the rural areas. Added to this, laws that retarded the movement of dependents into the urban area exaggerated the sexual and age imbalance within the African populations of the various areas. This imbalance has been only partially reduced by the accelerated migration of dependents which has occurred, as a result of the war, since 1977.

Apart from Riddell⁽²⁾, there has been no recent attempt to quantify the problem. The purpose of this study is to attempt to estimate its size and, to do this, land is treated as one, amongst other, alternative employment opportunities.

The Population Distribution

The primary sources of data are the Census Reports for 1962 and 1969, and the Monthly Digest of Statistics and its Supplement, published by the Central Statistical Office, in which most of the relevant figures are related to land categories defined in terms of legislation current at the time. For the purpose of this study, "African Rural Area" is used to include the Purchase Lands, the Tribal Trust Lands and the Specially Designated Areas. The term "tribal area" is used generally to mean land occupied under a tribal system of tenure and more specifically, in relation to data, to mean the Tribal Trust Lands. The size of the African Rural Area, defined in this way, was 16,8 m hectares in 1962, and 17,7 m hectares in 1969. There have been minor variations in the latter figure since that date.

Data for the urban area is also confused by variations in the land base. The authors of "Urban Development in the Main Centres" were concerned only with the fourteen largest centres and estimated the urban population in 1977 to be 1 265 000. The authors of the "Integrated Plan for Rural Development"⁽³⁾ estimated the urban (non-rural?) population to be 1 524 000 in 1976.

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The term "Commercial Farming area" is used for the land area not within the Urban or African Rural area; it includes National Land but not identifiable urban centres and mining settlements.

Population distribution changes between the two censi are summarised in Table I. Whilst the proportion of the African population resident in the African Rural area went up between 1962 and 1969, the proportion in the remainder of the country went down.

TABLE I : African Population : 1962 and 1969.

	<u>1962</u>	<u>1969</u>
African Rural Area:	55,1%	62,9%
Urban area:	16,6%	16,4%
Commercial Farming area:	28,3%	20,7%
	<u>100,0%</u>	<u>100,0%</u>

In the Integrated Plan, the proportions in the three areas in 1976 were estimated to be 52,5%; 22,6% and 24,0% respectively. These estimates are open to question because the proportion of the African population employed in commercial farming continuously declined throughout the period. An increase in the proportion living in the Commercial Farming area between 1969 and 1976 is consequently unlikely. On the other hand, water consumption figures are used by the Urban Development report to show that the urbanisation rate increased during the mid and late 1970s.

A reasonable estimate of the proportion of the African population residing in the three areas in 1977 would be 60%, 21% and 19%. This would mean, in figures, 3 864 000 in the African Rural area; 1 352 000 in the Urban area and 1 223 000 in the Commercial Farming area. In Table II, estimates of the non-African populations in the different areas have been added -

TABLE II : Population by Land Category : 1977⁽⁴⁾

	<u>000's</u>	<u>%</u>
African Rural area:	3 868	57,3
Urban area:	1 622	24,0
Commercial Farming area:	1 259	18,7
	<u>6 749</u>	<u>100,0</u>

The Population Imbalance

The migratory labour system and influx control encouraged the movement of males in the economically active age-group (17-60) from the African Rural area, in particular the tribal area, to the Commercial Farming area and the Urban area; while at the same time their dependents were encouraged to remain at home. By 1969, the dependency ratio (the ratio of males in the economically active age-group to dependents) was 1:5,66 in the African Rural area; whereas that for Zimbabwean Africans as a whole (excluding aliens) was 1:4,41; and the

ratio for Zimbabwean Africans in the Urban and Commercial Farming areas was 1:2,50. If all the areas had had the same dependency ratio 684 000 dependents who were living in the African Rural area in 1969 would have been living in the Urban or Commercial Farming areas. By 1977 the number of dependents of migrant workers in the African Rural area had increased to approximately 907 000.

The existence of this over-burden of dependents in the African Rural area lowers per capita income, absorbs output as subsistence, and increases the competition for available resources (including the land available per land-holder), but paradoxically the movement of these dependents to the Urban or Commercial Farming areas could reduce the gross income of the African Rural area, with a consequent lowering of agricultural inputs.

Stubbs⁽⁵⁾ estimated the total number of land-holders in the tribal area in 1976/77 to be 675 000. Of these, approximately 235 000 were women in the 17-60 age group who were dependents of migrant workers. If these wives had been living with their husbands at their places of work the average area of land available per land-holder in the tribal area would have been approximately 39 hectares instead of 26.

On the face of it, the relocation of the dependents would also decrease subsistence consumption and improve the level of investment in agriculture. Ignoring possible savings, a peasant economy can be represented -

$$O = S + E + T \quad \text{where:} \quad \begin{array}{l} O = \text{output;} \\ S = \text{subsistence consumption;} \\ E = \text{expenditure on consumables and} \\ \quad \text{services; and} \\ T = \text{expenditure on technological inputs.} \end{array}$$

- however, an expression more descriptive of an extended family, partially dependent on agriculture and partially dependent on the migratory labour system, would be -

$$O + R = S + E + T \quad \text{where:} \quad R = \text{wage income returned to the home.}$$

Figures quoted by Connel et al⁽⁶⁾ suggest that approximately 20% of total wages earned by migrants in Nairobi are remitted to the rural areas. If this proportion can be accepted as applicable to this country, the relationship between gross income, consumption and investment in agriculture, in the African Rural areas in 1977 was as follows(\$m) -

<u>Gross Income</u>			<u>Consumption</u>			<u>Inputs</u>		
O	+	R	=	S	+	E	+	T
116,2	+	106,0	=	212,3	+		+	9,9

Source: Supplement : Monthly Digest of Statistics.

Remittances apparently account for almost half the gross income of the African Rural area; but in the main are sent to the immediate dependents of the migrant

wage-earners. It would therefore appear that if the dependents were relocated the amount remitted would be less. Taking the extreme case, remittances would cease and gross income would be reduced to \$116,2m; while at the same time consumption would reduce (on a per capita basis) to \$158,4m (which figure would be more than the gross income). The competition between consumption and inputs for a share of gross income would be intensified not lessened.

If, however, the proportion of total earnings remitted to the rural areas is less than 12%, the removal of dependents would result in an improvement in per capita income and less intensive competition between consumption and inputs.

In practice, the increase in the land available to other land-holders and the effect of production taking place on more economically-sized units would eventually result in an increase in output to match the loss of remittances. Nevertheless, it would be unwise to implement a programme which resulted in the sudden removal of the migrants' dependents from the African Rural area; not only because of the possible effect on the economy of that area, but also because of the problems which are already being experienced in the towns and cities as a result of the change in the pattern of migration since 1977. These problems include a change in the type of accommodation required by the migrant, overcrowding of existing accommodation, and shortages of social and educational facilities.

The Population Carrying Capacity of the African Rural Area

Riddell calculated that the tribal area could absorb 274 000 land-holders. Adding to this figure the approximately 9 000 who could be accommodated, on the present land-use pattern, in the Purchase Lands, the African Rural area could carry 283 000 land-holders, which equates to a total population of about 1 531 000.

However, Riddell based his calculation on the "standard holding" of the Land Husbandry Act. The standard holding was a curious concept and was considerably smaller than an economic unit (Makings⁽⁷⁾). By definition, an economic unit provides returns to capital and labour which are competitive with those available from alternative investment or employment. The standard holding consisted of an arable allocation of 6 - 8 acres which was intended to provide subsistence and possibly a small income; and (if sufficient land was available) grazing rights sufficient to provide manure for the arable. Bulman⁽⁸⁾ quoting from an article in NADA (1958) and unnamed contributor⁽⁹⁾ (probably Makings) to Anderson, both link the size of the standard holdings to population pressure. The standard holding was, in fact, an average of the land available to the known population and, in many areas, was not agriculturally viable (there being too few grazing rights to maintain arable fertility).

Further, the 1959/60 Sample Survey of African Agriculture showed that an arable area of between 14 and 16 acres was necessary to maximise the return on the normal peasant capital investment in implements and draft animals.

The land capability classification used in this country has eight classes. Land Classes I to IV are suitable for cultivation; Class I being suitable for

continuous cultivation, Classes II and III for intermittent cultivation, and Class IV for occasional cultivation. Class V is wet land, some of which can be cultivated; Classes VI and VII are only suitable for grazing, and Class VIII is waste. The annual cropping area (or Land Class I equivalent) is that area of a unit of land which can be cropped each year and on which soil fertility can be maintained using an appropriate farming system. If the area under annual crops in a given unit of land exceeds the annual cropping area (which is exactly what happens when there is overpopulation and under-employment) soil fertility will decline. The unit of land is non-viable.

Vincent and Thomas⁽¹⁰⁾ showed that the farming intensity, or the degree to which the soil fertility programme can be intensified, is governed by climate and soil. They divided Zimbabwe into six natural regions in which farming systems of different intensity are appropriate. In the most favourable agro-ecological conditions (Natural Region I) an agriculturally viable unit will usually be capable of providing employment for more than one household (associated as employer and employed, partners, relatives, shareholders, or as members of a collective). In the extensive farming regions (IV and V) an agriculturally viable unit usually smaller than an economic unit.

In the Appendix, the formulae used to calculate the potential number of agriculturally viable units within an area of land are set out together with the broad assumptions regarding the land capability and farming systems which have been used to arrive at an estimate of a potential 155 400 viable units in the tribal area. In Table III the employment opportunities which these units could provide are estimated, and the total population carrying capacity of the African Rural area calculated by applying the overall dependency ratio.

Taylor⁽¹¹⁾ quotes figures for income and accommodation costs in Salisbury which imply a modal income, less accommodation costs, of about \$500 per annum for married persons seeking accommodation. Figures quoted by Cubitt and Riddell⁽¹²⁾ and the Central Statistical Office in 1976 indicate that the modal urban income (less accommodation costs) was less than \$400 per annum. The inference is that a rural employment opportunity should produce an income of about \$450 in order to meet the requirement of being competitive with alternative employment.

Using current farming practices, a net return of about \$60 per cultivated hectare can be expected in cropping regions (derived from Stubbs).

This equates to \$480 per annum per viable unit. But, with intensification and diversification, the return could be increased by about six times in Natural Region I, four times in Natural Region II, and two times in Natural Region III (see for example, Rodel and Hopley⁽¹³⁾). In Table III the number of employment opportunities in each region has been calculated by applying these factors.

In Natural Regions IV and V, a viable unit of land has an animal carrying capacity of only about twelve animal units which (assuming subsistence would be secured by cultivation) would provide only a net return of about \$250 per annum. An economic unit in these regions, providing an employment opportunity for one household, is about twice the size of a viable unit.

Turning to the irrigation potential, Stubbs estimates the total potential for irrigation in the tribal area at about 77 500 hectares. This would be capable of providing about 129 000 employment opportunities.

TABLE III : Estimate of the Population Capacity of the Agricultural Industry in the Tribal Area

Natural Region	Size* (m.ha)	Viable Unit (ha)	Potential No. of viable units	Factor	Employment Opportunities (i.e House-holds (000's))	Population Capacity (000's)
Tribal Area	(I 0,13	85	1,5	6,0	9,0	46,4
	(II 1,25	85	14,8	4,0	59,2	305,4
	(III 2,82	85	33,1	2,0	66,2	341,5
	(IV 7,31	114	64,1	0,5	32,0	165,1
	(V 4,77	114	41,9	0,5	20,9	107,8
Sub-Total		16,28	155,4		187,3	966,2
Irrigation :					129,0	665,5
Purchase Lands:					9,0	46,4
TOTAL :					325,3	1 678,1

*Source: Stubbs. Region X (unusable) omitted.

While Table III represents a very crude estimate of the population capacity of the African Rural area it summarises a situation in which -

- (a) all land units would be agriculturally and economically viable;
- (b) allowance had been made for increased agricultural employment by land-holders following consolidation of sub-economic and non-viable units; and
- (c) there would be no under-employment of the land-holders themselves.(14)

Such a situation could be regarded as the take-off point for the agricultural industry in the African Rural area.

The Size of the Population Redistribution Problem

With an estimated population carrying capacity of approximately 1,7m, and an actual population of approximately 3,9 m, the African Rural area, after allowing for the self-employed and those employed in commerce and administration, was overpopulated by about 2,0m in 1977. Similar calculations for the Commercial Farming area yield an underpopulation of about 1,0m, implying that the Urban area must absorb the remaining 1,0m plus the natural increase for the country as a whole.

The Integrated Plan and the "Proposals for a Five-year Programme of Development in the Public Sector" accept the redistribution of population as an objective but envisage the movement of only 693 000 people⁽¹⁵⁾ from the African Rural area to the Urban area within the five-year period. The natural increase of the population will be of the order of 1,27m during the period.

The present, un-planned, migration of refugees into the towns may or may not prove to be significant and permanent, but it would appear to be necessary to improve the ability of the Urban area to absorb migrants. What seems to be clear is that land redistribution cannot, by itself, solve the basic problem.

APPENDIX : VIABLE AGRICULTURAL UNITS : THE POTENTIAL IN THE TRIBAL AREA

The formulae used to determine the annual cropping area for different farming systems are :-

Systems Dependent on Fallow or Ley to Restore Soil Fertility

$$A.C.A. = \frac{\text{Area of Land Class}}{f} \times \frac{u}{100}$$

where "f" is a fertility maintenance factor appropriate to the land class and the farming system, and "u" the percentage of land available for cultivation after mechanical soil conservation works have been constructed.

Systems Dependent on Animal Manure to Restore Soil Fertility

$$A.C.A. = \frac{AU}{2,46} \times m$$

where "AU" is the carrying capacity of the grazing in animal units, and "m" is a fertility factor allowing for lower applications of manure when artificial fertiliser is used.

By taking some broad assumptions, it is possible to make an estimate of the potential number of viable land units in the tribal area -

- (1) (a) That in Natural Regions I - III a modified Alvord farming system, based on the use of manure and fertiliser is the most likely system to be used by peasant farmers; and
- (b) that in Natural Region IV and V a shifting cultivation system (for subsistence) is the most intensive cropping system which is ecologically viable.

- (2) That the land capability of the tribal area is:

<u>%</u>	<u>Land Class</u>
70	I - IV (potential arable)
25	V - VII
5	VIII (waste)

- (3) That the percentage available for cultivation after the construction of soil conservation works (u) is 75.
- (4) That $m = 1,1$.
- (5) That $f = 7,5$ for a shifting cultivation system.
- (6) That the carrying capacity of the grazing in Natural Regions I - III is one animal unit to four hectares.
- (7) That the appropriate annual cropping area (to utilise the normal investment in implements) is eight hectares.

To calculate the size of a viable unit in Natural Regions I to III -

$$A.C.A. = \frac{AU}{2,46} \times m$$

$$\text{i.e. } AU = \frac{A.C.A.}{m} \times 2,46 = \frac{8}{1,1} \times 2,46 = 17,45$$

$$\begin{aligned} \text{and a viable unit} &= \left((A.C.A. \times \frac{100}{u}) + (4 \times 17,45) \right) \frac{100}{95} \\ &= \left((8 \times \frac{100}{75}) + (4 \times 17,45) \right) \frac{100}{95} = 85 \text{ hectares.} \end{aligned}$$

To calculate the size of a viable unit in Natural Regions IV and V -

$$A.C.A. = \frac{\text{Land Class I - IV}}{f} \times \frac{u}{100}$$

or, as Land Class I - IV has been assumed to be 70% of the total land -

$$A.C.A. = \frac{70 \times \text{Viable Unit}}{100} \times \frac{1}{f} \times \frac{u}{100}$$

$$\begin{aligned} \text{and a viable unit} &= A.C.A. \times f \times \frac{100}{u} \times \frac{100}{70} \\ &= 8 \times 7,5 \times \frac{100}{75} \times \frac{100}{75} = 114 \text{ hectares.} \end{aligned}$$

Within the tribal area there are 4,2 m hectares in Natural Regions I - III, and 12,08m hectares in Natural Regions IV and V. The potential number of viable units in the tribal area is therefore approximately 155 400.

FOOTNOTES

1. Jennings, A.C. (1935) Land Apportionment in Southern Rhodesia. Journal of the Royal African Society. Vol. XXXIV.
2. Riddell, R.C. (1978) The Land Problem in Rhodesia. Mambo Occasional Papers, Socio-Economic Series No. 11. Gwelo: Mambo Press.
3. Urban Development in the Main Centres and Integrated Plan for Rural Development, July, 1978, were both published as annexures to Proposals for a Five-year Programme of Development in the Public Sector. January 1979. Ministry of Finance, Salisbury.
4. There are various estimates of the total population in 1977; Riddell estimated the population of the African Rural area to be 4 442 000 apparently by deducting the population of the main centres from the total and assuming that 80% of the remainder were in the African Rural areas.
5. Stubbs, A.T. (1977) Agricultural Extension for Development in the Tribal Trust Lands; an address to the Rhodesian Agricultural Extension Workshop, (cyclostyled). See also, The Tribal Trust Lands in Transition: Land Use. Rhodesia Science News. Vol.11, No. 8 August, 1977.
6. Connel J., Dasgupta B., Laishley R., and Lipton M. (1976) Migration from Rural Areas. Delhi: O.U.P. I.L.O.
7. Makings, S.M. (1958) Economic Appraisal of the Broad Prospects for African Agriculture in Southern Rhodesia. (cyclo-styled).
8. Bulman, M.E. (1970) The Native Land Husbandry Act of Southern Rhodesia. Tribal Areas of Rhodesia Research Foundation, Salisbury, 1975.
9. Anderson, R. (195?) The Agro-economic Survey. Part II of An Agricultural Survey of Rhodesia. Government Printer, Salisbury.
10. Vincent V. and Thomas, R.G. (195?) The Agro-ecological Survey. Part I of An Agricultural Survey of Rhodesia.
11. Taylor, J.C.B. (1978) The Response of Local Authorities to Rapid Urban Growth. C.S.I.R. Pretoria. November.
12. Cubitt, V.S. and Riddell, R.C. (1974) The Urban Poverty Datum Line in Rhodesia. University of Rhodesia, Salisbury.
13. Rodel, M.G.W. and Hopley, J.D.H. Investigations into Systems of Farming Suitable for Tribal Trust Land. Rhodesia Agricultural Journal Vol. 70 No.1.

14. Full employment is dependent on the type of agricultural innovation introduced to achieve intensification or diversification. In the context of this study, a "useful innovation" would be one which increased production per man without increasing his ability to cultivate larger areas. A change to a more "efficient" form of draft power would probably increase rural overpopulation and under-employment.
15. Of this figure, 50 000 people are expected to go to new urban centres. The effect of the change in housing policy, (to home ownership and site-and-service schemes) on the ability of the urban centres to absorb migrants, is not taken into account.



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